



Vulnerability to epidemic malaria in the highlands of Lake Victoria basin: The role of climate change/variability, hydrology and socio-economic factors

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Abstract:

Endemic malaria in most of the hot and humid African climates is the leading cause of morbidity and mortality. In the last twenty or so years the incidence of malaria has been aggravated by the resurgence of highland malaria epidemics which hitherto had been rare. A close association between malaria epidemics and climate variability has been reported but not universally accepted. Similarly, the relationship between climate variability, intensity of disease mortality and morbidity coupled with socio-economic factors has been mooted. Analyses of past climate (temperature and precipitation), hydrological and health data (1961-2001), and socio-economics status of communities from the East African highlands confirm the link between climate variability and the incidence and severity of malaria epidemics. The communities in the highlands that have had less exposure to malaria are more vulnerable than their counterparts in the lowlands due to lack of clinical immunity. However, the vulnerability of human health to climate variability is influenced by the coping and adaptive capacities of an individual or community. Surveys conducted among three communities in the East African highlands reveal that the interplay of poverty and other socio-economic variables have intensified the vulnerability of these communities to the impacts of malaria.

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Resource Description

Communication: ☒

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Early Warning System: ☒

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure : ☒

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weather or climate related pathway by which climate change affects health

Ecosystem Changes, Precipitation, Temperature

Temperature: Fluctuations

Geographic Feature: 

resource focuses on specific type of geography

Tropical, Other Geographical Feature

Other Geographical Feature : highlands

Geographic Location: 

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Country

Other African Country: Kenya; Uganda; Tanzania

Health Impact: 

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Malaria

Mitigation/Adaptation: 

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: 

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Population of Concern: A focus of content

Population of Concern: 

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status

Resource Type: 

format or standard characteristic of resource

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Research Article

Timescale: ☐

time period studied

Short-Term (

Vulnerability/Impact Assessment: ☐

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content